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Memo

DATE: February 14, 2003

TO: RHIC E-Coolers

FROM: *Ady Hershcovitch*

SUBJECT: **Minutes of the February 14, 2003 Meeting**

Present: Michael Brennan, Xiangyun Chang, Gregory Citver, Ady Hershcovitch, Michael Iarocci, Jorg Kewisch, Derek Lowenstein, William Mackay, Thomas Roser, Triveni Srinivasan-Rao, Dejan Trbojevic, Dong Wang.

Topics discussed: Future Nuclear Physics Facilities, Simulation & Calculations, 939 Setup.

Future Nuclear Physics Facilities: Thomas opened the meeting by reporting that tomorrow he is scheduled to make a presentation at Rutgers (in New Jersey) about plans for RHIC II, at a meeting on future plans for nuclear physics facilities. In that meeting representative of other facilities are scheduled to give 10-minute presentations. RHIC was given a 30-minute presentation, to be divided between RHIC II and E-RHIC. BNL plans are to develop RHIC E-Cooling and E-RHIC in parallel. For RHIC E- Cooling R & D is to last through FY 06 with final system in FY 08 – 09. In parallel, E-RHIC is to have R & D up to FY 08 with operational system setup during FY 08 – 13.

Simulation & Calculations: Jorg reported on a problem with his program. One matrix has a sign error. Jorg is presently correcting the bug.

Dong presented magnetized beam simulation results that have been performed with PARMELA. The purpose of the simulations is to assist with magnetization evolution measurements that are being contemplated. He showed plots of angular speed versus radius, angular momentum versus radius, Y' versus X , and X' versus X . Derek ask for an explanation regarding a “hole” in both the angular speed and angular momentum versus radius plots. Dong’s reply was that it was a computer art effect due to a technical flow in PARMELA that does not describe real physics. Time evolution of the angular speed versus radius and angular momentum versus radius plots showed as expected radial expansion without change in plot shape, while in the Y' versus X plot the shape changed with time. A discussion driven by Dejan and Waldo regarding various measurement techniques that can be applicable. No positive conclusion could be reached. Thomas pointed out that a 4D measurement is needed, i.e., a tomographic technique, which requires the expertise of Christoph (who was not present).

939 Setup: in answer to Thomas' question, Triveni, Gregory, and Michael Iarocci reported on the status the 939 setup. Mechanical assembly of the initial setup and major components of the cryogenic system have been completed at AES. This coming Wednesday February 19th liquid nitrogen cool-down is scheduled. Liquid nitrogen cooling is designed to primarily check sensors and measure movements due to mechanical contractions. After those tests, the system is to be shipped to BNL with a ("not cleaned") RF cavity. Shipment is expected in two weeks. Low level RF measurements are expected to commence in mid-March.

The deposition chamber has now been baking at a temperature of 200 C for the past 3 days. Before baking the pressure was in the 10^{-9} Torr range. Tests in the deposition chamber could begin as soon as it is clean, and evaporation experiments can start in March. The laser is at AES awaiting an enclosure. That laser is needed only when 100 mA of current is to be generated. For initial tests the low power He – Ne laser will suffice.